



INSULIN PUMP THERAPY AS A PART OF HIGH-TECHNOLOGY MEDICAL CARE IN MOSCOW REGION ROUTINE CLINICAL PRACTICE.

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Introduction

Insulin pump therapy is a progressive method of treatment of both patients with type 1 diabetes mellitus (T1DM) and type 2 diabetes mellitus (T2DM) who needs insulin.

Aim: The aim of this study was to evaluate the efficacy of the long-term use of the insulin pump therapy in Moscow Region routine clinical practice.

Materials and Methods

The data was obtained from 32 patients with T1DM (93,8%) and T2DM (6,3%) who were switched from multiple daily injections (MDI) to insulin pump therapy (Accu-Chek Spirit Combo, “Roche”) in the Endocrinology Department of Moscow Regional Research and Clinical Institute during the period from 2015 to 2017. The mean age of patients was 31±9,9 years and disease duration was 15,7±7,9 years. Total daily insulin dose on pump was calculated according to the insulin dose each patient received on MDI. Basal and bolus rates were determined based on the protocol developed by Bode et al ¹. Each patient was performed a continuous glucose monitoring with the use of iPro-2, “Medtronic”.

All patients were followed up during a year after switching to an insulin pump. The levels of HbA1c, total daily insulin dose, and the number of weekly hypoglycemia were analyzed.

Figure 1 The distribution of diabetes types in patients

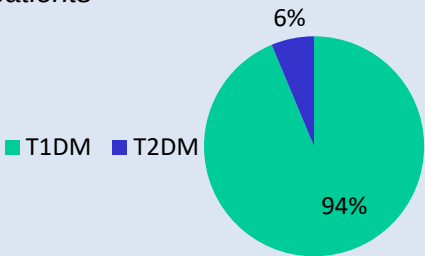


Table 1 Group characteristics

Index		Value
Type of Diabetes	Type 1, n (%)	(93,8%)
	Type 2, n (%)	(6,3%)
Age, years, ± SD		31±9,9
Total Daily Dose on MDI ± SD		51,5 [40,0-69,0]
Duration of diabetes , years ± SD		15,7±7,9
HbA1c (%)± SD		7,9 % [6,9-8,9]
Number of hypoglycemia		2,2±1,8

Results

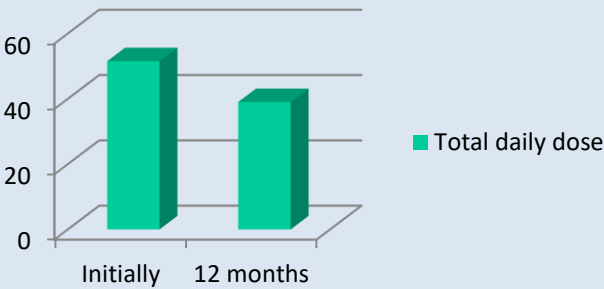
According to the data obtained the 12-month use of insulin pump leads to the following:

- the total daily insulin dose declines from 51,5 [40,0-69,0] to 39,0 [30,0-50,0] units (p=0,002);
- the level of HbA1c significantly decreases from 7,9 % [6,9-8,9] to 6,9 % [6,3-8,2] (p = 0,008).
- the number of hypoglycemia lowers from 2,2±1,8 to 1,4±2,1 per week (p=0,024).

Table 2. The dynamics of total daily insulin dose, HbA1c and number of hypoglycemia

Index	Initially	12 months	p
Total daily insulin dose, units	51,5 [40,0-69,0]	39,0 [30,0-50,0]	0,002
HbA1c, %	7,9 % [6,9-8,9]	6,9 % [6,3-8,2]	0,008
Number of hypoglycemia, n ± SD	2,2±1,8	1,4±2,1	0,024

Total daily dose



Conclusion

This study shows the efficacy of the long-term use of CSII that can be proved by the decrease in HbA1c level, number of hypoglycemia, and total daily insulin dose. Besides the obvious benefits mentioned above, this method gives an opportunity for patients as well as for health officials to master modern medical technologies.

References

1. Bode D.W. Pumping Protocol. A guide to insulin pump therapy initiation. – Georgia, Atlanta, 2008;